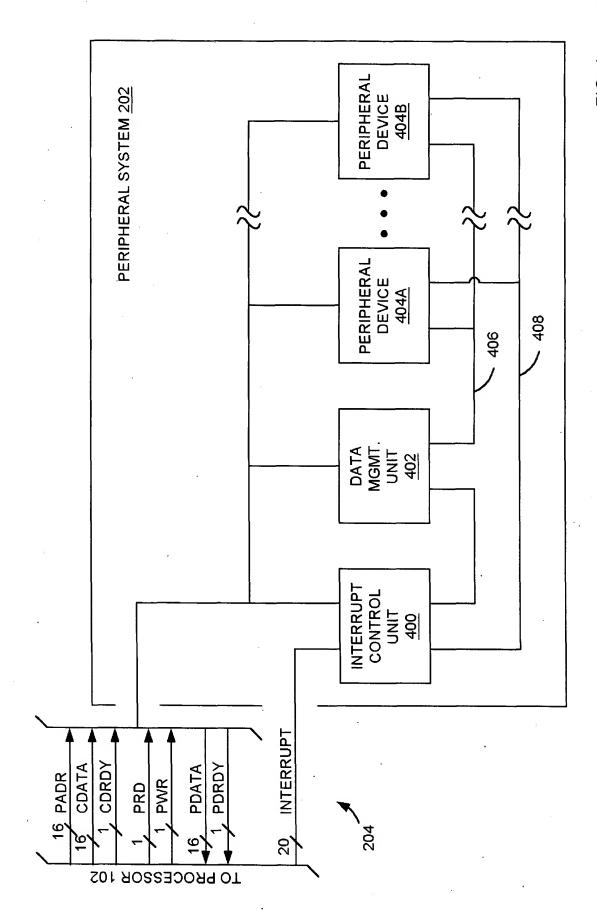
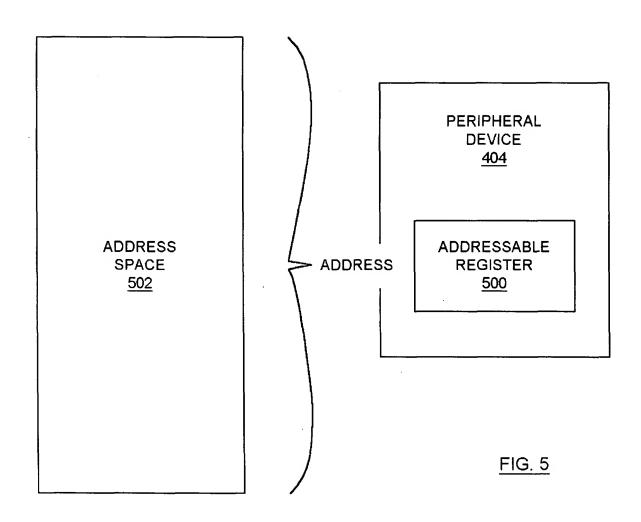


FIG. 3

Data Processing Systems Including High Performance Buses and Interfaces, and Associated Communication Methods
Inventor: Hung Nguyen
Attorney Docket: 02-5604 (4028-03000)



Inventor: Hung Nguyen Attorney Docket: 02-5604 (4028-03000)



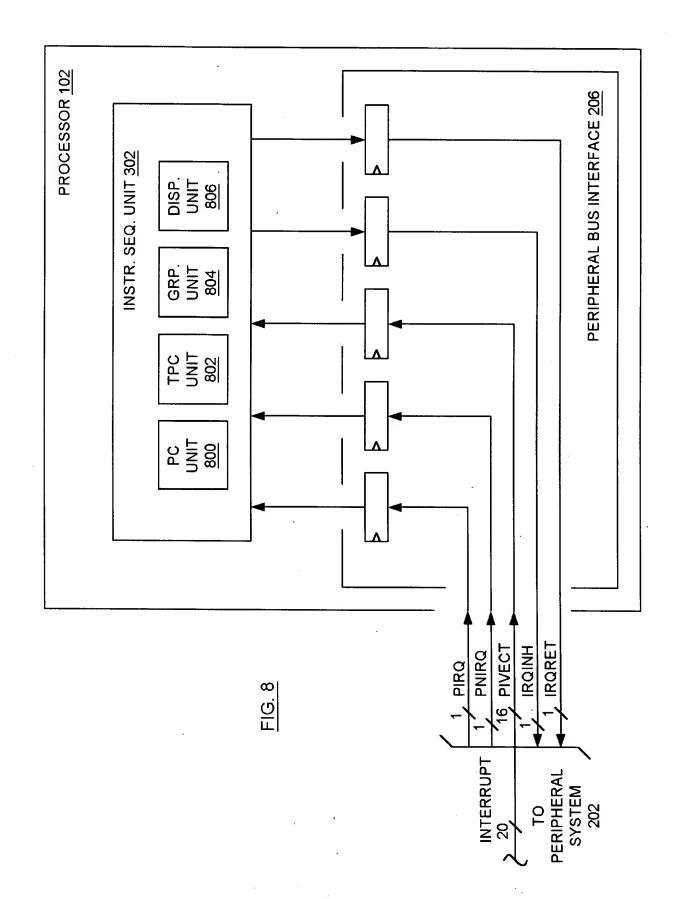
Inventor: Hung Nguyen Attorney Docket: 02-5604 (4028-03000)

CLOCK											
	FD	GR	RD	AG	МО	M1	EX	WB			
		FD	GR	RD	AG	МО	M1	EX	WB		
			FD	GR	RD	AG	МО	<b>M</b> 1	EX	WB	

•	208				
OPCODE FIELD <u>700</u>	DESTINATIO REGISTER FIELD 702	REGISTER			
	·	<u>FIG. 7A</u>			
	208				
OPCODE FIELD <u>706</u>	SOURCE/ DEST. REG. FIELD <u>708</u>	IMMEDIATE DATA FIELD <u>710</u>			

FIG. 7B

Data Processing Systems Including High Performance Buses and Interfaces, and Associated Communication Methods Inventor: Hung Nguyen Attorney Docket: 02-5604 (4028-03000)



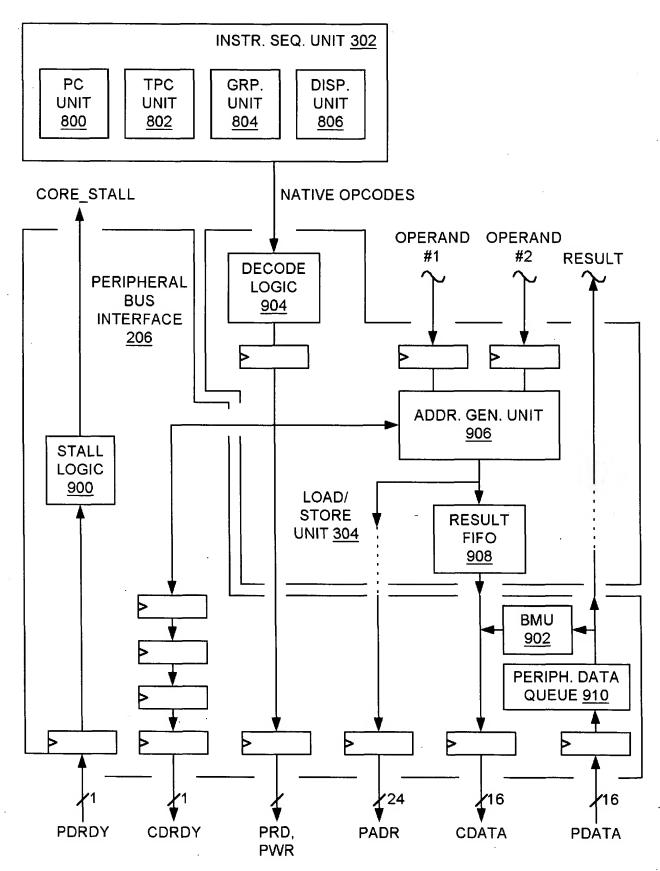


FIG. 9

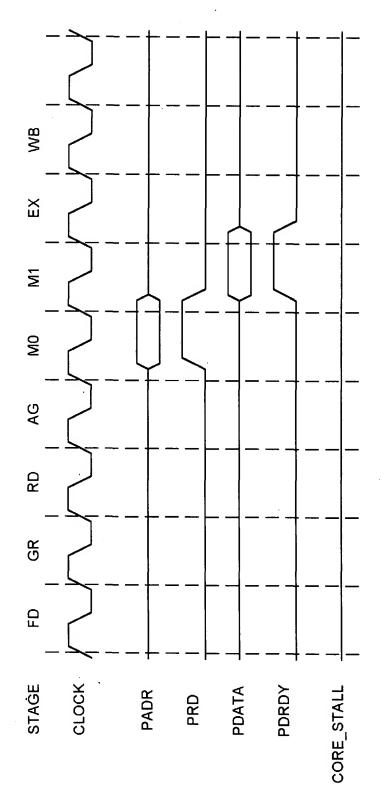


FIG. 10

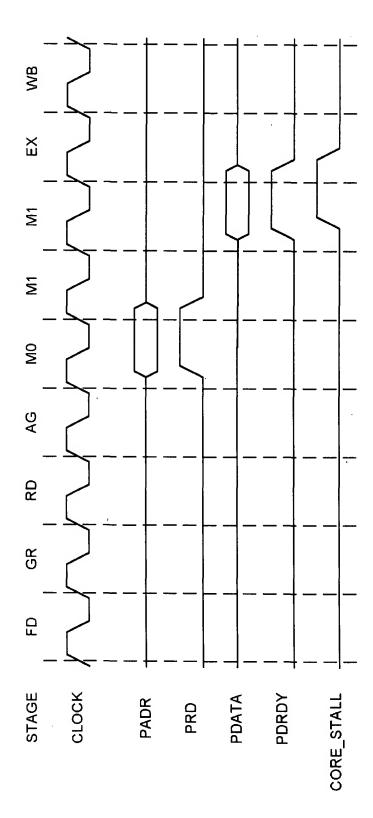


FIG. 11

1200

DRIVE AN ADDRESS
OF THE ADDRESSABLE REGISTER
ON ADDRESS SIGNAL LINES
OF A BUS
AND AN ASSERTED
READ CONTROL SIGNAL
ON A READ CONTROL SIGNAL LINE
OF THE BUS
DURING A FIRST PIPELINE STAGE

1202

RECEIVE THE VALUE
VIA DATA SIGNAL LINES
OF THE BUS
WHEN A CORRESPONDING
READY SIGNAL
DRIVEN ON A READY SIGNAL LINE
OF THE BUS
IS ASSERTED
DURING A SUBSEQUENT
SECOND PIPELINE STAGE

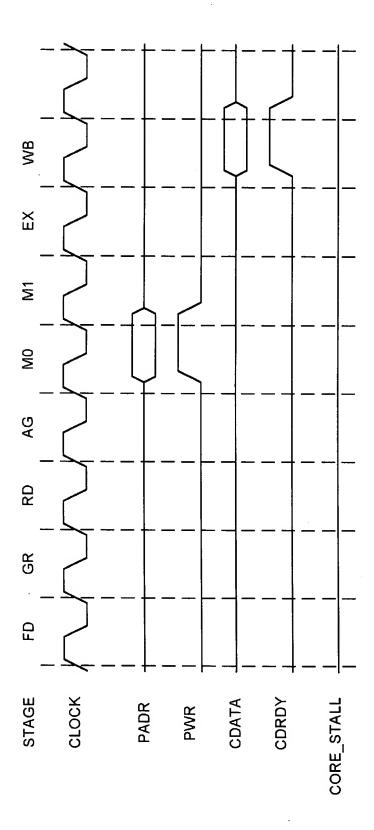
1204

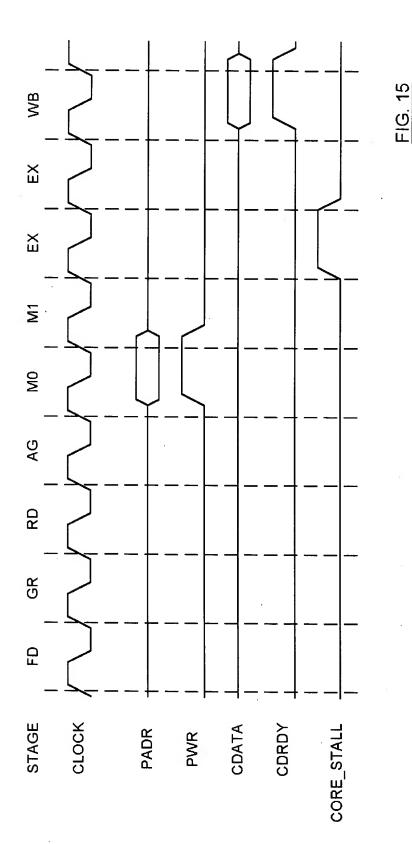
**-** 1300

RECEIVE AN ADDRESS
DRIVEN ON ADDRESS SIGNAL LINES
OF A BUS
WHEN A READ CONTROLSIGNAL
DRIVEN ON
A READ CONTROL SIGNAL LINE
OF THE BUS
IS ASSERTED
DURING A FIRST PIPELINE STAGE
1302

IF THE ADDRESS IS AN ADDRESS
OF THE ADDRESSABLE REGISTER,
DRIVE THE CONTENTS
OF THE ADDRESSABLE REGISTER
ON DATA SIGNAL LINES
OF THE BUS
AND AN ASSERTED READY SIGNAL
ON A READY SIGNAL LINE
OF THE BUS
DURING A SUBSEQUENT
SECOND PIPELINE STAGE

1304





1600

DRIVE AN ADDRESS
OF THE ADDRESSABLE REGISTER
ON ADDRESS SIGNAL LINES
OF THE BUS
AND AN ASSERTED
WRITE CONTROL SIGNAL
ON A WRITE CONTROL SIGNAL LINE
OF THE BUS
DURING A FIRST PIPELINE STAGE

1602

DRIVE THE VALUE
TO BE STORED
IN THE ADDRESSABLE REGISTER
ON DATA SIGNAL LINES
OF THE BUS
AND AN ASSERTED READY SIGNAL
ON A READY SIGNAL LINE
OF THE BUS
DURING A SUBSEQUENT
SECOND PIPELINE STAGE

1604

Inventor: Hung Nguyen Attorney Docket: 02-5604 (4028-03000)

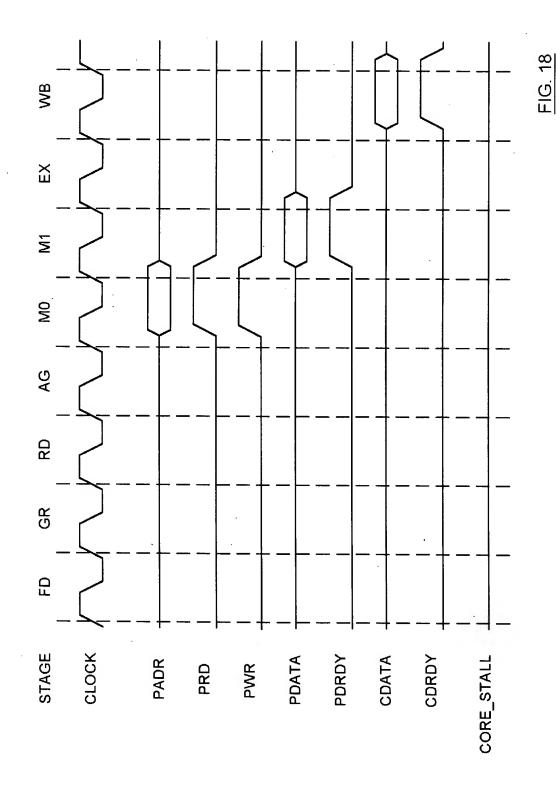
1700

RECEIVE AN ADDRESS DRIVEN ON ADDRESS SIGNAL LINES OF A BUS WHEN A WRITE CONTROLSIGNAL **DRIVEN ON** A WRITE CONTROL SIGNAL LINE OF THE BUS IS ASSERTED **DURING A FIRST PIPELINE STAGE** 1702

IF THE ADDRESS IS AN ADDRESS OF THE ADDRESSABLE REGISTER, RECEIVE THE VALUE VIA DATA SIGNAL LINES OF THE BUS WHEN A CORRESPONDING **READY SIGNAL** DRIVEN ON A READY SIGNAL LINE OF THE BUS IS ASSERTED **DURING A SUBSEQUENT** SECOND PIPELINE STAGE

1704

STORE THE VALUE IN THE ADDRESSABLE REGISTER 1706



**1900** 

DRIVE AN ADDRESS
OF THE ADDRESSABLE REGISTER
ON ADDRESS SIGNAL LINES
OF A BUS,
AN ASSERTED READ CONTROLSIGNAL
ON A READ CONTROL SIGNAL LINE
OF THE BUS, AND
AN ASSERTED WRITE CONTROLSIGNAL
ON A WRITE CONTROL SIGNAL LINE
OF THE BUS
DURING A FIRST PIPELINE STAGE
1902

RECEIVE THE VALUE
VIA A FIRST SET
OF DATA SIGNAL LINES
OF THE BUS
WHEN A CORRESPONDING
FIRST READY SIGNAL
DRIVEN ON A READY SIGNAL LINE
OF THE BUS
IS ASSERTED
DURING A SUBSEQUENT
SECOND PIPELINE STAGE

<u>1904</u>

A

FIG. 19A

Inventor: Hung Nguyen

Attorney Docket: 02-5604 (4028-03000)

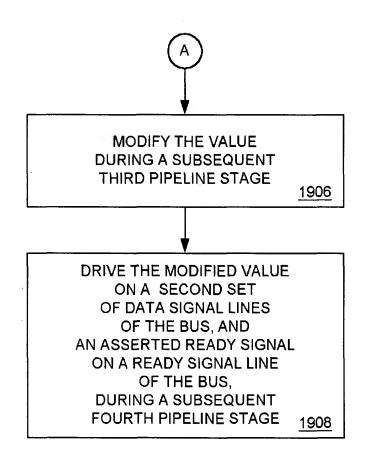
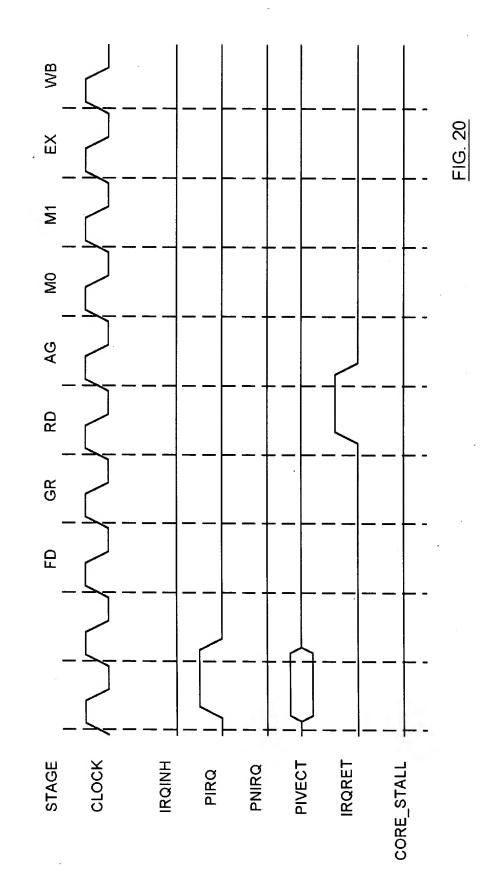
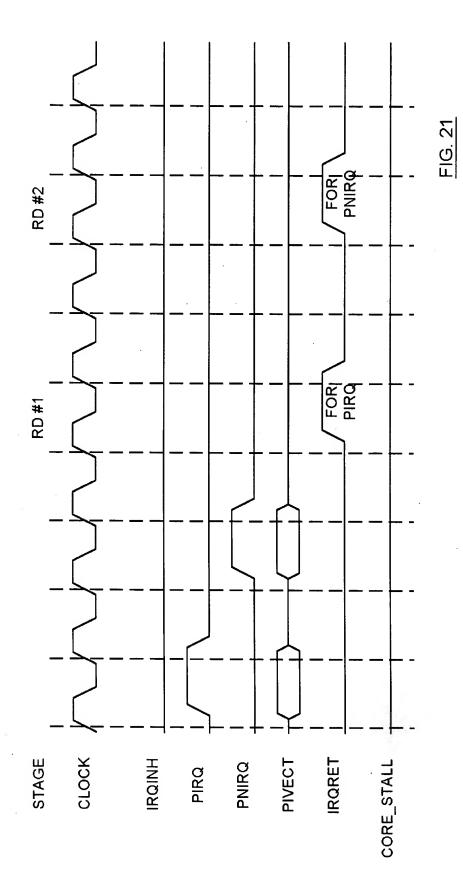
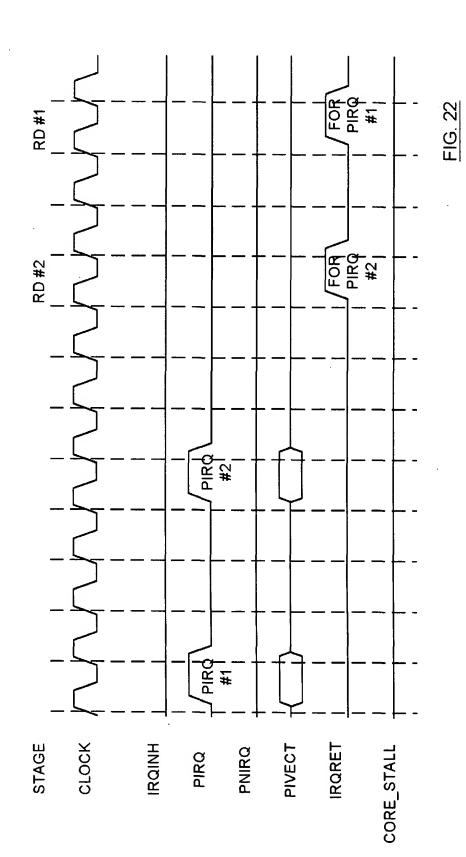


FIG. 19B







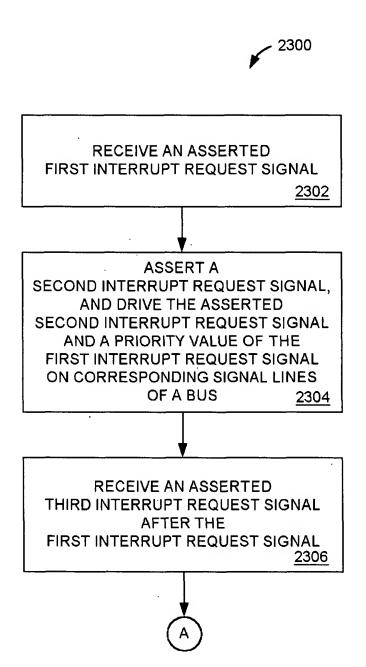


FIG. 23A

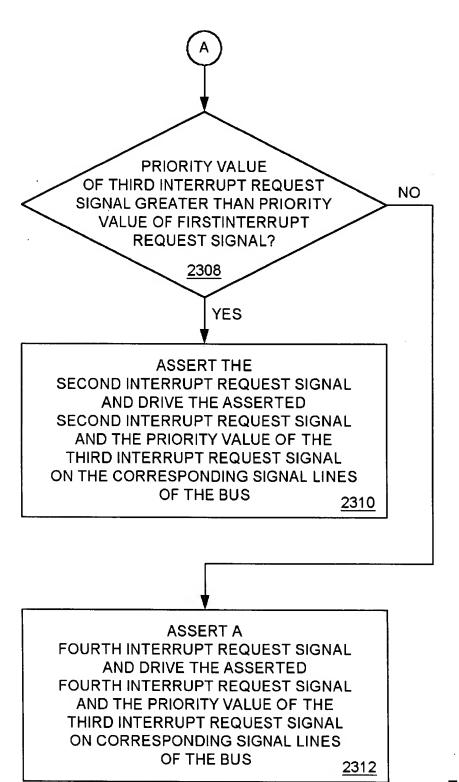
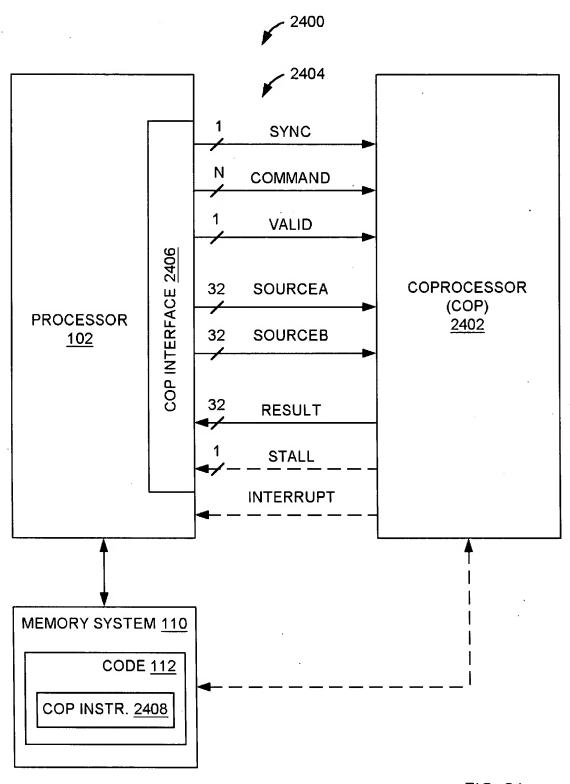


FIG. 23B

 $\tilde{i}$ 



<u>FIG. 24</u>

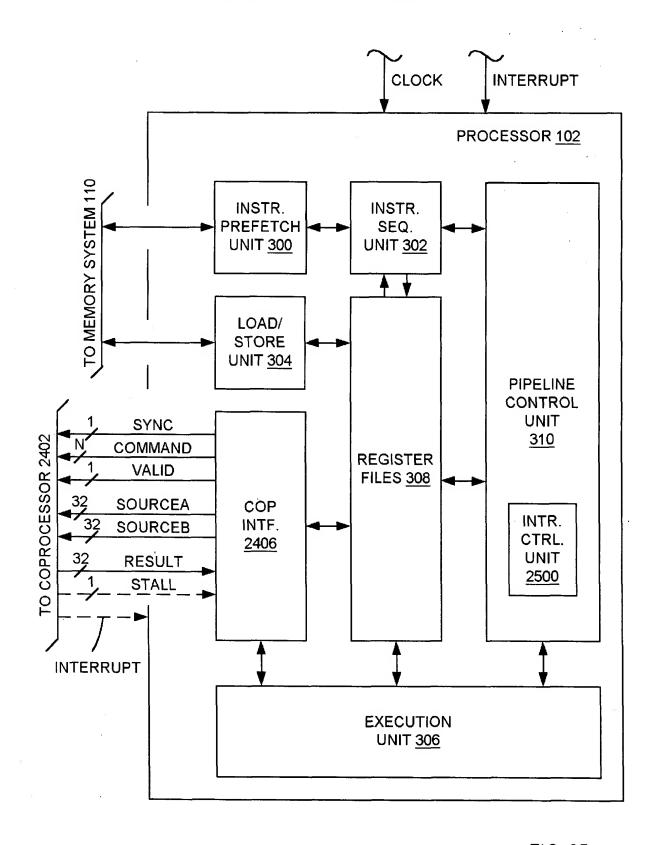


FIG. 25

Data Processing Systems Including High Performance Buses and Interfaces, and Associated Communication Methods
Inventor: Hung Nguyen
Attorney Docket: 02-5604 (4028-03000)

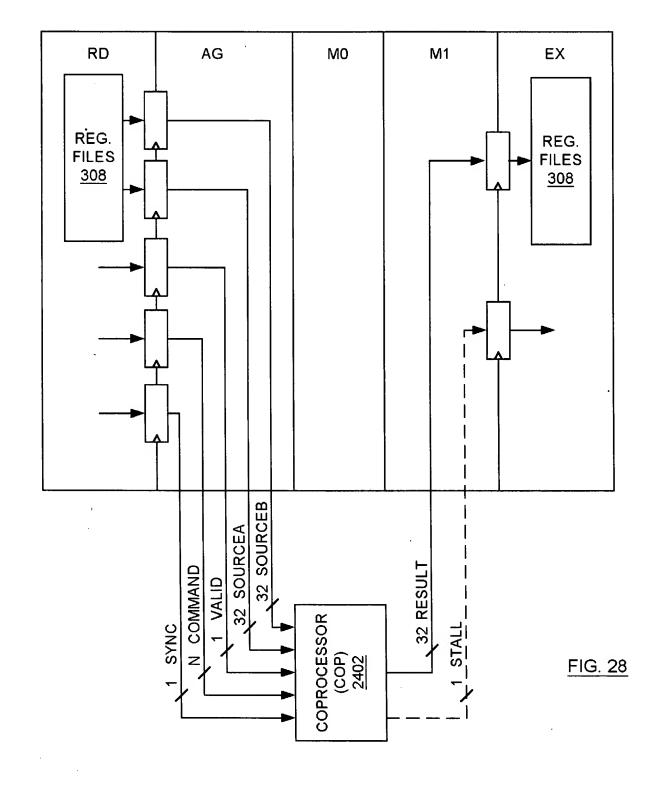
		-				P				
	7	USER COMMAND FIELD <u>2610</u>	FIG. 26A		0	ŝ	FIG. 26B		0	
	11 10 8					USER COMMAND FIELD <u>2618</u>				USER COMMAND FIELD 2624
~	14 13 11	SOURCE REG. 2 FIELD <u>2608</u>		_		SC				CON
<b>~</b> 2408	41	).Е 1 306		<b>~</b> 2408	16 15			2408	2	
•	1716	SOURCE REG. 1 FIELD <u>2606</u>		•		SOURCE REGISTER FIELD <u>2616</u>		•	16 15	ION 22
		DESTINATION REGSITER FIELD <u>2604</u>			. 19 18	SOURCE/ DEST. REG. F FIELD <u>2614</u>			ψ	DESTINATION REGSITER FIELD <u>2622</u>
	20 19				22 21	<u>.</u> □ π				
		OPCODE FIELD <u>2602</u>				OPCODE FIELD <u>2612</u>				OPCODE FIELD <u>2620</u>
	33				31				31	

FIG. 26C

Data Processing Systems Including High Performance Buses and Interfaces, and Associated Communication Methods
Inventor: Hung Nguyen
Attorney Docket: 02-5604 (4028-03000)

	0		FIG. 27A		0		FIG. 27B		0	
		USER COMMAND FIELD <u>2708</u>				USER COMMAND FIELD <u>2714</u>				USER COMMAND FIELD <u>2718</u>
~ 2408	16 15			. 2408	16 15			. 2408	16 15	
•		SOURCE REG. 2 FIELD <u>2706</u>		•				•	16	
	21 1918	SOURCE REG. 1 FIELD <u>2704</u>		;	21 1918	SOURCE REGISTER FIELD <u>2712</u>				OPCODE FIELD <u>2716</u>
	22 21	Е <u>02</u>			22 21	E 10				OPC
		OPCODE FIELD <u>2702</u>				OPCODE FIELD <u>2710</u>				
	31				31				31	

FIG. 27C



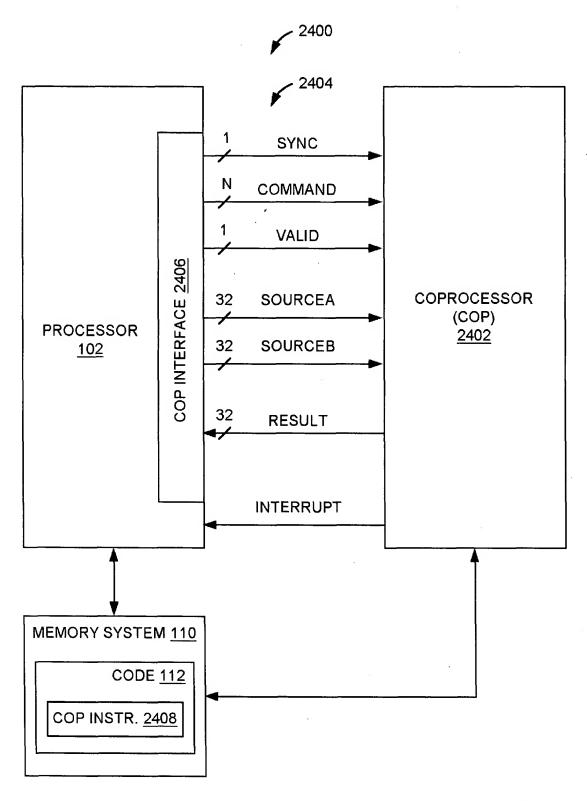


FIG. 29